many novelties. Miss Lorrain Smith gave an account of the lichens, which include a new genus and a fair proportion of new species. Miss E. M. Wakefield referred to the fungi, the geographical distribution of which showed points of interest; and Miss G. Lister described the small collection of Mycetozoa.

Geological Society, March 10.—Mr. R. D. Oldham, president, in the chair.—Prof. A. H. **Cox** and A. K. **Wells**: The Lower Palæozoic rocks of the Arthog-Dolgelley district (Merionethshire). This paper gives an account of the geology of the country between the Cader Idris range and the Mawddach Estuary. The physiography of the district was described, and a summary of the work of previous investigators given.

MANCHESTER.

Literary and Philosophical Society, February 17.—Sir Henry A Miers, president, in the chair.—Dr. T. Graham **Brown**: The function of the brain. The activity of an animal, as seen by an observer, consists in movements of its limbs, changes of its attitude, changes in its expression, and so on. This activity is usually called "behaviour." In itself the action is a physiological one, and may be analysed and described in terms of physiological mechanism. It is also used as an *index* of the mental processes. The separate movements of the parts of the body are *integrated* by the nervous system in the total behaviour. This integration may occur at different levels in the central nervous system. The great brain must be present if the animal is to exhibit all the finer shades of behaviour which characterise the normal animal. The two general methods of examination were described and illustrated by experimental observations. Brain injuries and their results in men and animals, with consequential paralysis, and the theory of the "cerebral localisation of functions" were discussed.

Literary and Philosophical Society (Chemical Section), February 27.—Mr. R. H. Clayton, chairman, in the chair.—J. **Allan**: Engineering as applied to the buildings and plant in chemical works.

DUBLIN.

Royal Dublin Society, February 24.—Dr. F. Hackett in the chair.—Prof. Wm. **Brown**: Note on the decay of magnetism in bar magnets. Twenty-one bar magnets of different chemical composition were re-tested for magnetic moment per gram after being laid aside for ten years. The most retentive were found to be magnets with about 1 per cent. of C. and those with about 3 per cent. of Cr. The general results show that in ten years the manganese group lost about 25 per cent. of their magnetism, the tungsten group 20 per cent., and the chromium group about 28 per cent.—T. G. **Mason**: The inhibition of invertase in the sap of *Galanthus nivalis*. The inversion of sucrose in the sap extracted from the leaves of *Galanthus nivalis* takes place with extreme slowness, so that at the end of five days, at a temperature of 29° C., it is still incomplete. The delay is observed whether the sap is pressed from untreated leaves or from leaves the cells of which have been rendered permeable by exposure to intense cold or to toluene vapour; but the delay is least marked in the sap extracted by the first method. It is shown that inversion such as occurs is due neither to the acids of the cell-sap nor to the enzymes of organisms external to the cells, and hence the presence of invertase in the sap seems established. Efforts were made to demonstrate the presence of an invertase-inhibitor by dialysis, and by testing the effect of the sap on yeast-invertase, with negative results. Possibly the greater part of the invertase of the sap is thrown down with the colloids coagulated by extraction, especially during exposure to cold or to toluene vapour. The inversion of the sucrose was traced by thermo-electric observations of the depression of freezing point of the sap. These observations usually showed a comparatively rapid inversion during the first few hours, followed by a slight reversal or suspension of the process for the next few hours, and then a steady inversion at a very slow rate. The reversal is remarkable, and may be attributed to a condensation of hexoses to form sucrose or to oxidation of the hexoses.

Books Received.

Spring Songs. By T. J. W. Henslow. Pp. 54. (London: Electrical Press, Ltd.) 1*s*. 6*d*. net.

The Propagation of Electric Currents in Telephone and Telegraph Conductors. By Prof. J. A. Fleming. Third edition. Pp. xiv+370. (London: Constable and Co., Ltd.) 21*s*. net.

The Arctic Prairies. By E. Thompson Seton. Pp. xii+308. (London: Constable and Co., Ltd.) 8*s*. 6*d*. net.

Paper Making and its Machinery. By T. W. Chalmers. Pp. xi+178+vi plates. (London: Constable and Co., Ltd.) 26*s*. net.

Mathematical Papers for Admission into the Royal Military Academy and the Royal Military College, and Papers in Elementary Engineering for the Royal Air Force for the Years 1910–1919. Edited by R. M. Milne. (London: Macmillan and Co., Ltd.) 10*s*. 6*d*.

Annual Reports on the Progress of Chemistry for 1919. Vol. xvi. Pp. ix+234. (London: Gurney and Jackson.) 4*s*. 6*d*. net.

A Manual of Elementary Zoology. By L. A. Borradaile. Third edition. Pp. xviii+616+xxi plates. (London: Henry Frowde and Hodder and Stoughton.) 18*s*.

The Ghost World: Its Realities, Apparitions, and Spooks. By J. W. Wickwar. Pp. 158. (London: Jarrolds, Ltd.) 2*s*. 6*d*. net.

Treatise on General and Industrial Inorganic Chemistry. By Prof. E. Molinari. Second edition. Translated from the fourth Italian edition by T. H. Pope. Pp. xix+876+2 plates. (London: J. and A. Churchill.) 42*s*. net.

Industrial Organic Analysis. By P. S. Arup. Second edition. Pp. xi+471. (London: J. and A. Churchill.) 12*s*. 6*d*. net.

Electricity: Its Production and Applications. By R. E. Neale. Pp. viii+136. (London: Sir Isaac Pitman and Sons, Ltd.) 2*s*. 6*d*. net.

Aviation: Theorico-Practical Text-book for Students. By B. M. Carmina. Pp. ix+172. (New York: The Macmillan Co.; London: Macmillan and Co., Ltd.) 11*s*. net.

The Link between the Practitioner and the Laboratory. By C. Fletcher and H. McLean. Pp. 91. (London: H. K. Lewis and Co., Ltd.) 4*s*. 6*d*. net.

A Memorial Volume containing an Account of the Photographic Researches of Ferdinand Hurter and Vero C. Driffield. By W. B. Ferguson. Pp. xii+374. (London: The Royal Photographic Society of Great Britain.) 25*s*.

Common Diatoms. By T. K. Mellor. Pp. 16+plates. (London: W. Wesley and Son.) 6*s*. net.

Legal Chemistry and Scientific Criminal Investigation. By A. Lucas. Pp. viii+181. (London: E. Arnold.) 10*s*. 6*d*. net.

A Map of Europe and Africa (on Mercator's Projection), having Special Reference to Forest Areas

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and the Distribution of the Principal Timber Trees. By J. H. Davies. (Edinburgh: W. and A. K. Johnston; London: Macmillan and Co., Ltd.) 8*s.* net.

A Map of South America, Central America, and the West Indies (on Mercator's Projection), having Special Reference to the Principal Forest Regions and the Chief Timber Trees. By J. H. Davies. (Edinburgh: W. and A. K. Johnston; London: Macmillan and Co., Ltd.) 8*s.* net.

Cytology, with Special Reference to the Metazoan Nucleus. By Prof. W. E. Agar. Pp. xii+224. (London: Macmillan and Co., Ltd.) 12*s.* net.

Tuberculosis and Public Health. By Dr. H. Hyslop Thomson. Pp. xi+104. (London: Longmans and Co.) 5*s.* net.

Macmillan's Geographical Exercise Books: Key to Physical Geography. With Questions by B. C. Wallis. Pp. 48. (London: Macmillan and Co., Ltd.) 4*s.* 6*d.* net.

The Sea Fisheries. By Dr. J. T. Jenkins. Pp. xxxi+299. (London: Constable and Co., Ltd.) 24*s.* net.

The Flora of Chepstow. By W. A. Shoolbred Pp. x+140. (London: Taylor and Francis.) 10*s.* 6*d.* net.

Type Ammonites. By S. S. Buckman. The Illustrations from Photographs mainly by J. W. Tutcher. Part xxi. Pp. 9–16+14 plates. (London: W. Wesley and Son.)

Diary of Societies.

THURSDAY, MARCH 25.

INSTITUTION OF NAVAL ARCHITECTS (at Royal Society of Arts), at 11.—Sir Alfred Yarrow: Notes on our Economic Position as a Shipbuilding Country.—J. Anderson: Further Notes on the Dimensions of Cargo Steamers.—Dr. J. Bruhn: Freeboard and Strength of Ships.

INSTITUTION OF NAVAL ARCHITECTS (at Royal Society of Arts), at 3.—P. R. Jackson: The Stabilisation of Ships by means of Gyroscopes.—Prof. K. Suyehiro: Yawing of Ships caused by Oscillation amongst Waves.

ROYAL INSTITUTION OF GREAT BRITAIN, at 3.—Stephen Graham: The Hope for Russia.

ROYAL SOCIETY, at 4.30.—Prof. A. R. Forsyth: Note on the Central Differential Equation in the Relativity Theory of Gravitation.—R. D. Oldham: The Frequency of Earthquakes in Italy in the Years 1896 to 1914.—A. F. Dufton: A New Apparatus for Drawing Conic Curves.—Capt. J. W. Bispham: An Experimental Determination of the Distribution of the Partial Correlation Coefficient in Samples of 30.

CHEMICAL SOCIETY (Annual General Meeting), at 5.—Sir James J. Dobbie: Presidential Address.

ROYAL COLLEGE OF PHYSICIANS, at 5.—Sir John R. Bradford: The Clinical Experiences of a Physician during the Campaign in France and Flanders, 1914–1919 (Lumleian Lecture).

CHILD-STUDY SOCIETY (at Royal Sanitary Institute), at 6.—Dr. E. Sloan Chesser: Adolescence and the Continuation Schools.

INSTITUTION OF ELECTRICAL ENGINEERS (at Institution of Civil Engineers), at 6.—Discussion on:—(*a*) The Electrical Equipment of Artisan Dwellings (with Introductory Paper by L. Milne). (*b*) The Report of the Earthing Sub-Committee of the Wiring Rules Committee of the Institution.

CONCRETE INSTITUTE, at 7.30.—E. L. Hall: Steelwork in the new London County Hall.

INSTITUTION OF NAVAL ARCHITECTS (at Royal Society of Arts), at 7.30.—C. I. R. Campbell and C. H. May: The Effect of Size upon Performance of Rigid Airships.—Prof. E. G. Coker and A. L. Kemball, jun.: The Effects of Holes, Cracks, and other Discontinuities in Ships' Plating.

CHEMICAL SOCIETY (Informal Meeting), at 8.

FRIDAY, MARCH 26.

INSTITUTION OF NAVAL ARCHITECTS (at Royal Society of Arts), at 11.—Eng.-Com. H. B. Tostevin: Experience and Practice in Mechanical Reduction Gears in Warships.—J. J. King-Salter: The Balancing of Rotors and Determining the Position and Amount of the Balancing Weights.—Prof. T. H. Havelock: Turbulent Fluid Motion and Skin Friction.

PHYSICAL SOCIETY OF LONDON, at 5.—Prof. A. S. Eddington and Others: Discussion on Einstein's Theory of Relativity.

WIRELESS SOCIETY OF LONDON (at Institution of Civil Engineers), at 6.—Capt. L. A. T. Broadwood: Harmonics in Continuous Wave Transmissions (Illustrated by Lantern Slides and Experiments).

INSTITUTION OF MECHANICAL ENGINEERS (Informal Meeting), at 7.—P. L. Young and Others: Discussion on Foundry Memories.

JUNIOR INSTITUTION OF ENGINEERS, at 7.30.—W. A. Tookey: The Future of the Gas Industry.

MEDICAL OFFICERS OF SCHOOLS ASSOCIATION (at 11 Chandos Street, W.), at 8.—Dr. G. H. Lock and Others: Discussion on Care of Minor Ailments in School Children.

ROYAL SOCIETY OF MEDICINE (Epidemiology and State Medicine Section), at 8.30.—Dr. S. Monckton Copeman: The Relationship of Smallpox and Alastrim.

ROYAL INSTITUTION OF GREAT BRITAIN, at 9.—Sir J. J. Thomson: The Scientific Work of the late The Right Hon. Lord Rayleigh.

SATURDAY, MARCH 27.

ROYAL INSTITUTION OF GREAT BRITAIN, at 3.—Sir J. J. Thomson: Positive Rays.

MONDAY, MARCH 29.

INSTITUTION OF AUTOMOBILE ENGINEERS (Graduate Section), at 8.—W. D. Pile: The Use of Benzol.

ROYAL INSTITUTE OF BRITISH ARCHITECTS, at 8.—Delissa Joseph: Higher Buildings for London.

ROYAL GEOGRAPHICAL SOCIETY (at Æolian Hall), at 8.30.—Commander D. G. Hogarth: War and Discovery in Arabia.

TUESDAY, MARCH 30.

TECHNICAL INSPECTION ASSOCIATION (at the Royal Society of Arts), at 5.—Annual General Meeting.

ZOOLOGICAL SOCIETY OF LONDON, at 5.30.—Sir Frank Colyer: Exhibition of Skulls of *Macacus rhesus*.—Dr. C. F. Sonntag: Abnormalities of the Abdominal Arteries of a Young Panda.—A. Loveridge: Notes on East African Lizards collected 1915–1919, with Descriptions of a new Genus and Species of Skink, and a new Subspecies of Gecko.—A. M. Altson: The Life-history and Habits of Two Parasites of the Blowfly.

ROYAL PHOTOGRAPHIC SOCIETY OF GREAT BRITAIN (Lantern Meeting) at 7.—E. W. H. Piper: Gloucester Cathedral.

ILLUMINATING ENGINEERING SOCIETY (at Royal Society of Arts), at 8.—J. W. T. Walsh and Others: Discussion on Motor-car Headlights in relation to Traffic Requirements.

RÖNTGEN SOCIETY (in X-ray and Electrical Departments, St. Bartholomew's Hospital), at 8.15.

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